intercom

Journal of the Air Force C4ISR community ★ September 2006

AEF UPDATE

FIVE YEARS LATER

★★★★★

FAILURE

IS NOT AN OPTION

CYBERSPACE MISSION ★ SUSTAINING COMM ★ AUSTERE AIRFIELD

UPGRADE IN KIRKUK ★ CLEAR CONNECTION ★ FRONTLINE SATELLITES

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SITEMAP

SEPTEMBER 2006 ★ VOLUME 47, NUMBER 9

Cover design by: Jim Verchio

FROM THE TOP

THE THEME

POINT OF VIEW

ANOTHER DAY IN PARADISE

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MAGAZINE AWARDS

2005
Best Magazine
DoD's Thomas Jefferson Awards program & Air Force Media Contest

Best Internal Magazine
Clarion Award * Women in Communications

2003/2004
Most Improved Magazine
Clarion Award * Women in Communications

Award of Excellence – Internal Magazine
NAGC Blue Pencil Competition

Best Online Newspaper
Air Force Media Contest

Best Designed Publication
DoD's Military Graphic Artist Competition

FROM THE EDITORIAL DESK

By Jim Verchio
Intercom Editor

I learn something every year when it comes time for us to put together the AEF update issue. Tarin Kowt? I had no idea we had people there and the scary part is — the Taliban is just over the mountain ridge.

Looking through photographs, reading submissions and watching on TV what's happening in the region reminds me of how volatile the Middle East is. Oh and guess what, our comm Airmen are right there in the mix.

To me the above photo, which was taken by Tech. Sgt. Jeremy Lock while on patrol with the Army in Ramadi, Iraq, illustrates exactly what the coalition faces every day and night — danger behind every door.

This month marks the fifth anniversary of 9/11. In the days that followed, America pledged that if you're a terrorist, or you harbor terrorists, she will find you. So every day, the coalition heads out to knock down the doors of those who threaten democracy and pursue violence instead of peace.

Those who threaten peace: Beware. From the soldiers doing door-to-door searches in Iraq to the air traffic controllers aiding medevac missions in Afghanistan, we all have a mission to complete. The costs are high, but we will not be deterred.

In the next 29 pages, we show our comm warriors doing what they do best. They're in Balad, Kirkuk and yes, even Tarin Kowt. They're helping to save lives in medical field hospitals, and because they're masters of technology, coalition aircraft can take out criminals like Abu Musab al-Zarqawi in a moment's notice.

Being an expeditionary Airman is not easy. It's never going to make you a millionaire or a celebrity. However, in these pages you display pride in yourselves, your service and your country, and to me that makes each and every one of you fighting the Global War on Terror a true American hero, and my hat's off to you!

JAG IN A BOX

Nothing comes cheap, and music's no exception

It's open house season — what are the rules on playing music at public events?

Fritz Mihelcic
AFCA Deputy Chief Counsel

Federal law protects copyrighted music. In fact, copyright protection is even included in Article 1, Section 8, of the U.S. Constitution. Music rights in America are mostly managed by the American Society of Composers, Authors, and Publishers and Broadcast Music Inc.

Penalties for publicly playing music without purchasing the rights can be steep — $30,000 for negligently playing music, $150,000 for a "willful" violation. The penalties are typically applied per song. Thus, illegally playing three songs at an open house or other public event, could cost the government $90,000 to $450,000.

Playing unlicensed music, whether off the radio or from another recording, is a huge gamble for a very small return — it's much better to purchase the rights to play the music before the open house event begins. On the other hand, if you contract with a company to provide the music, make sure they are responsible for securing the rights to play the music.

JAG note: Last month, the term "Military Treatment Facilities" was used. That should have read "Military Housing Funds." Sorry for any confusion.

Send in your question to:
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"We need to offer this nation the maximum number of options so (it) can deter, defeat and dissuade any enemy over the next period of time."

SECRETARY WYNNE

Air Force focuses on cyberspace mission

Tech. Sgt. Cohen A. Young / Det 16 AFNEWS

Secretary of the Air Force Michael W. Wynne speaks to the newest group of brigadier general selectees and their spouses during the Senior Leaders Orientation Course in Washington, D.C. The week-long course prepares future generals for issues they may encounter when they take on their new leadership roles.

WASHINGTON — As does its enemies, the Air Force considers cyberspace a warfighting domain.

The Air Force has always been in the business of flying and fighting in the air, and in past decades, has included space in that mission. This year the Air Force expanded its mission to include cyberspace — the domain of information — said Secretary of the Air Force Michael W. Wynne, during the Senior Leadership Orientation Course here in July.

Both the secretary and Air Force Chief of Staff Gen. T. Michael Moseley addressed SLOC attendees.

"You always wonder what it is to be 'netcentric,'" said Secretary Wynne. "I think it's a warfighting domain. I see our enemies think it's a warfighting domain. So let's make it an Air Force domain."

Air Force officials cemented cyberspace into its mission statement after realizing the service was already heavily involved in the transport, packaging and protection of valuable warfighting information.

"**It turns out, we are the logisticians of information**," Secretary Wynne said. "We pick it up everywhere, we send it through space, we get it up there — like a pachinko machine — through our satellite network, and back down to the ground station. (We put it) into the hands of the commander, just in time, and we figured we have to defend it."

The protection and maintenance of information systems involves defending the nodes of cyberspace to include the satellite dishes, satellites, routers and the development and deployment of new satellite systems. The Air Force designs, deploys and defends information systems for the joint warfighter and for itself, Secretary Wynne said.

"We are netcentric, and we actually deliver and we depend upon cyberspace to get this done," he said. "We put a lot of trust in the messages we receive and the targeting we get ... because we drop stuff from way up there, and we shoot from huge distances (away). We need to trust the messaging traffic and imagery and geolocators when they come over our network."

Taking on the domain of cyberspace will not pull resources from other missions, Secretary Wynne said, because the Air Force already has as many resources committed to cyberspace as it needs and will simply focus on the ones it has.

"**I found out we have over 20,000 people working in cyberspace," he said. "We are now ... trying to figure out how to organize, train and equip (them). We always did. But it was more of just a pickup game. Now it is becoming more organized**."

"With the chief of staff's support, we are moving in that direction," he said. "We are doing a lot of scouting, feeling around and forward looking. This is a domain the Air Force could now be dominating."

Force shaping

The secretary also addressed potential concerns about cutting manpower, or force shaping, during wartime. He said force shaping efforts will result in better managed resources that can be redirected at other areas of concern for the Air Force, including recapitalization of the aging aircraft fleet.

"We have got to figure out how to make sure the people who are here in 2015 to 2020 have the best equipment for the next fight," Secretary Wynne said. "We need to offer this nation the maximum number of options so (it) can deter, defeat and dissuade any enemy over the next period of time."

General Moseley discussed the Air Force's efforts to posture itself for success in both the War on Terrorism and in future wars, while trying to avoid mistakes it has made in the past.

The general told course attendees the air forces of the past have failed because they did not understand their enemies, they were not interdependent with a joint team, they didn't increase training and infrastructure to support their fights, and because they didn't begin their fights with the right amount of aircraft, munitions or support.

Air Force priorities

The priorities and initiatives of today's Air Force, General Moseley said, are designed to ensure the service doesn't repeat the past.

The three priorities today include prosecuting the War on Terrorism, developing and caring for Airmen and their families, and recapitalizing and modernizing the air and space inventory.

The Air Force has 67 specific "executable initiatives" to help it achieve its priorities, General Moseley said. Those initiatives include ensuring 100 percent of uniform-wearing Airmen are in an aerospace expeditionary force bucket, enhancing combat skills training during basic military training, finalizing total force integration efforts, and expediting the acquisition process on programs like the KC-X, F-22 and the joint cargo aircraft.

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READABILITY BASED ON FLESH-KINCAID SCORES

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From desktop computers to satellite systems, the Air Force senior leadership is placing a large emphasis on netcentricity and cyberspace.

JARGON WATCH

Netcentric architecture: Is a massively distributed client/server architecture with components and services that are available throughout the entire Air Force.

SLOC: Senior Leadership Orientation Course

MISSION STATEMENT

Deliver sovereign options for the defense of the United States of America and its global interests — to fly and fight in Air, Space and Cyberspace

U.S. AIR FORCE

5 AEF UPDATE

Courtesy photo

Master Sgt. Michael Patz, 332nd Expeditionary Communications Squadron, and Staff Sgt. Ruben Ulibarri, 332nd Expeditionary Civil Engineer Squadron, plug in power to the upgraded Network Control Center.

ALL IN A DAY'S WORK

Sustaining comm in Balad, throughout theater

Workers lower one of the new shelters into place.

By Capt. Chantel Knapp
332nd Expeditionary Communications Squadron

BALAD AIR BASE, Iraq — The network control center team here just completed a project that doubles the size and capabilities of the facility as well as upgraded the power source that runs the facility and technical control.

And they did it all in record time.

When the AEF rotations 1 and 2 arrived in May, they discovered the NCC was operating at full capacity, but the center had no more rack space and power consumption was at its peak.

The configuration of the NCC, which supports more than 5,000 users and the Air Force's largest wing in the theater, consisted of three shelters: two contained typical equipment racks and servers, and one was used as office space by network administrators.

With several new projects and requirements scheduled to begin in the next couple of months, the team realized it was time to finally expand its facility and upgrade the power source.

Getting shelter

The NCC team located two unused shelters that were ordered two years ago for expansion purposes. The problem was they were still in the United States and wouldn't arrive in time.

However, through coordination, the NCC team justified having the shelters shipped via airlift, and they arrived within two weeks.

Power grid

The NCC team then turned its attention to the power supply they shared with technical control. Teamed with the 332nd Expeditionary Civil Engineer Squadron, they worked on a plan that would provide a triple-redundant power supply for the NCC. This meant the NCC would have a separate power away from the standard grid, which is susceptible to blackouts.

Once electricians had everything wired and tested, the most difficult part of the job began — coordinating down time with everyone since the power transfer required everything to be shut down while the work was completed.

Coordination efforts

After an initial date for the cutover was scheduled for mid June, the Authorized Service Interruption request was sent to the Central Region Theater Network Operations Center, who in turn coordinated with Balad and nine other organizations for their approval of the power outage.

Then, Balad and the nine organizations coordinated with all of their users.

At the same time, the NCC began coordinating with more than 15 critical communications users here to include the air traffic control tower, the command post, the 727th Expeditionary Air Control Squadron and other various units for their concurrence on the proposed outage time.

After the coordination was completed, the ASI had to be cancelled due to a real-world operational mission. The NCC immediately set a second ASI date and began the entire coordination process again.

Power up

During the evening of June 24, the 332nd ECS, 332nd ECES and several engineers from U.S. Central Command Air Forces met to go over the final details of the plan. They started working the next day, and although three hours of downtime were scheduled to complete the work, communications were back online in half the time.

"This multi-disciplined team came together and made a huge impact on combat operation in the theater," said Lt. Col. Kenryu Bryson, 332nd Expeditionary Communications Squadron commander. "The NCC now has increased its capacity and sustainability with a significant increase in space and the triple-redundant power supply. The Red Tail communicators are now poised to more readily support "Combat Air Power...Right Here, Right Now."

After two years, the NCC had no more rack space, and power consumption was at its peak. It was time to upgrade.

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READABILITY BASED ON FLESH-KINCAID SCORES

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When you're supplying comm to an entire theater, powering a top-notch network control center is crucial to the warfighter.

JARGON WATCH

- **NCC**: Network Control Center
- **AOR**: Area of Responsibility
- **TNC CENT**: Theater Network Operations Center-Central Region
- **AOR**: Area of Responsibility
- **ASI**: Authorized Service Interruption

BALAD FAST FACTS

- **Balad Air Base is located in Northern Iraq approximately 68 kilometers North of Baghdad**
- **The installation is the launching point for F-16 Falcons, Army helicopters and Army military intelligence unmanned aerial systems.**
- **It is the largest and busiest aerial port operation in all of Iraq. In a typical month at Balad, as much cargo and five times as many people move through there as does through Dover AFB, Del.**

5 AEF UPDATE

Photos by Master Sgt. Orville F. Desjarlais Jr. / 455thAEW PA

A C-130 Hercules from Bagram Airfield, Afghanistan, lands on the dirt runway at Tarin Kowt, Afghanistan.

NOT FORGOTTEN IN AFGHANISTAN

AUSTERE AIRFIELD

Even though hostiles are right over the mountain ridge, these Airmen put emotions aside to help medevacs in Afghanistan

TARIN KOWT, Afghanistan – There isn't much to look at here except for a Humvee with a control tower on top of it, a deserted plywood aircraft control tower, a camouflaged tent for shade, antennas and an air-conditioned tent used to fix equipment. It would seem like a pretty boring place if it weren't for Taliban fighters hiding in the mountains that surround the base.

Because coalition forces are still fighting insurgents in the area, 11 Airmen were called in to help set up an airfield used mostly by C-130s, Army helicopters, Russian aircraft and an occasional C-17.

Those 11 Air Force members include air traffic controllers, communications and maintenance specialists. Sometimes they do more than conduct air traffic and keep comm lines open. Because the airstrip has no barriers, people and vehicles cross over the landing strip, so when aircraft circle before final approach, the controllers occasionally have to dash out and shoo people off the runway like free-range chickens. Sometimes they walk down the runway with their arms stretched out like a plane, which tells the drivers there's an aircraft coming in.

During the group's first day here, after setting up its mobile air traffic control tower, a helicopter's engine died and the pilot somehow landed at the end of the runway and later limped in for repairs. Then that same afternoon, they witnessed a U.S. attack on Taliban extremists in the foothills of the nearby mountains.

It's the calls for assistance that pull the crews back into the reality of why they're there.

"We hear aircrews over the radio that they need this and that," said Tech. Sgt. John Roberts, an air traffic controller deployed from Tinker Air Force Base, Okla. "It's different. It's crazy. Sometimes I have to put all that stuff in the back of my mind so I can work … and that's when it sinks in that we're that close to the action."

They're not just close to the action, they're in it. The air traffic controllers can hear the urgency in the voices over the radio as the aircrews fly the wounded in from less than five miles from where they work. But, they maintain their cool and work closely with the coalition during the increased activity there.

In the first week of August, eight coalition soldiers were killed and reports showed that Taliban forces control most of this southern section of the country. The Australian government recently announced the addition of troops to help secure Tarin Kowt. This city is the capital of the Oruzgan province, which is one of Afghanistan's most mountainous and least developed provinces.

— Master Sgt. Orville F. Desjarlais Jr., 455th AEW PA

WHERE IS TARIN KOWT?

"When I see (medical evacuations) happen, and listen to the radio as the pilots come in, it sinks in that we're that close to the action."

Tech. Sgt. Toshiya Jones monitors aircraft as they park on the narrow, dirt airstrip at Tarin Kowt, Afghanistan. Sergeant Jones is an air traffic controller deployed from Tinker AFB, Okla.

5 AEF UPDATE

TEAMWORK EQUALS SUCCESS

UPGRADE *in* Kirkuk

By Staff Sgt. Stacy Fowler
506th Air Expeditionary Group

KIRKUK AIR BASE, Iraq — Living in austere conditions is common place in today's expeditionary world, and since the beginning of Operation Iraqi Freedom, Team Kirkuk has been living that life.

Now, thanks to the teamwork of communicators and civil engineers, members of the 727th Expeditionary Air Control Squadron, Operating Location Alpha, that austere reality is a thing of the past.

"Without their help, this wouldn't have been possible," said Capt. Adam Rogge, 727th EACS OL-A officer in charge. "The comm and CE troops have worked so hard alongside the EACS troops to get us out of those tents and into real buildings.

The new facilities, contract value of $245,000, are wonderful. They're clean, have plenty of network and power drops and are overall efficiently designed. They are saturated with environmental control units, so troops stay cool in the new buildings. It's absolutely outstanding."

The 727th EACS, OL-A, has been on station since 2003, and in tents the whole time. While the tents were able to keep out rain and cold — and the air conditioners kept the heat at bay — there was the problem of dirt and dust getting into sensitive equipment. Lack of space was also a huge issue.

When the new 727th crews took over two months ago, the buildings were already constructed, but there was no power, communications nor air conditioning.

According to Tech. Sgt. Christopher Kirsch, OL-A material controller, communicators and engineers were out at the new site for more than three weeks straight, working long to get things set up as quickly as possible.

"Without the total-team effort, we would have been stuck in those tents a lot longer than we were," Sergeant Kirsch said. "We owe them a lot. They worked as hard as we did to get things set up. In doing so, we were able to get in and get our equipment set up with minimal delay."

When the buildings were ready, the next challenge was to move the radar and communication equipment to the new site.

"When the time was right for us to move, we had to move fast," said Senior Airman Amy Henry, an OL-A electronic detection technician. "Shutting systems down meant we lost the picture over northern Iraq for a time. We couldn't keep Balad, or our own operators, informed if aircraft were in the air, or where to direct an attack if someone was jamming us. We still had military fighters and civilian aircraft in the air and luckily we were sometimes able to warn them beforehand that we're 'midnight' — basically blacked out — and that they would either be without coverage or flying blind."

Through hard work and persistence, it took only a short time for the transfer to be made, and the radar mission was restored. It took less than 20 hours for all communications — including all networks, radio and phones — to be disconnected and reconnected, thanks to assistance from the communications and civil engineer squadrons. Communications Airmen assisted with both the connections as well as the transfer of cables, while engineers helped dig cable trenches.

"We were working side-by-side to get this done, it was one big group effort," said Staff Sgt. Greg Goodnight, a ground radio maintainer at OL-A. "We terminated the fiber at about 2 a.m. one night, and were able to get everything moved and started in just 20 hours — even though we did take breaks for sleeping and eating."

The opinion of the Airmen in the 727th EACS, OL-A, is that without the support of communicators and engineers, the move would have been even more difficult, and in some ways almost impossible.

"You name it, from simple tasks such as painting walls to complicated tasks like designing custom antenna mounts and placing 13,000 pound barriers, the three 506th AEG squadrons pulled off the upgrade without missing a beat," Captain Rogge said. "The best way to describe it is we didn't just put bodies in new chairs with walls around them; we moved a command and control weapon system, and that took a group effort."

Staff Sgt. Stacy Fowler / 506th AEG

(Front to back) Staff Sgt. Matthew Hendrickson, Tech. Sgt. Michael Hager and Airman 1st Class Corey Chism, 727th Expeditionary Air Control Squadron, Operating Location Alpha, pull a tent off its frame. The tent, and others like it, was the working environment for the 727th until hardened structures were built thanks to a combined effort between the 727th and units from the 506th Air Expeditionary Group.

Airman 1st Class Derek Riley, 727th Expeditionary Air Control Squadron, checks over a radar antenna. The squadron's Airmen provide commanders and pilots a real-time view of northern Iraq's airspace.

Tech. Sgt. Christopher Gish/ HQ NORTHCOM

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READABILITY BASED ON FLESH-KINCAID SCORES

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Operating in an austere environment doesn't mean you have to sacrifice comfort or space for your pro gear.

KIRKUK FAST FACTS

- Kirkuk Air Base is located in northern Iraq approximately 240 km north of Baghdad.
- In mid-April 2003, comm warriors from the 5th Combat Communications Group stepped off a C-130 to set up the barebones comm infrastructure.

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AEF UPDATE

TROUBLESHOOTING FOR THE FUTURE

Clear connection

By Senior Airman Tim Beckham
332nd Air Expeditionary Wing Public Affairs

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READABILITY BASED ON FLESH-KINCAID SCORES

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Harsh conditions such as sand and wind can wreak havoc on communications equipment. Preventive maintenance keeps Balad's comm infrastructure operating at peak performance.

BALAD AIR BASE, Iraq —In today's Air Force, communication is crucial and what better way to stay ahead of the game than by fixing problems before they arise?

That is exactly what a group of Airmen from the 332nd Expeditionary Communications Squadron are doing, which should ultimately troubleshoot future communications problems.

"When a base is first set up, the communications systems are set up for quick usage," said Senior Airman Doug Brown, a satellite communications technician deployed from Robins AFB, Ga.

"Once they (antennas and cables) are replaced, it should prevent future problems for years," added Senior Airman Matthew Heist, a radio maintenance technician from Wright-Patterson AFB, Ohio.

Once the base is up and running, it's common for these Airmen to come in, clean up and make the communication systems a little more permanent.

Senior Airman Tim Beckham / 332nd AEW PA

Senior Airmen Doug Brown, left, a satellite communications technician and Matthew Heist, a radio maintenance technician with the 332nd Expeditionary Communications Squadron, look for the correct connector to interface the existing cable to a new antenna at the top of the wing headquarters building in Balad.

"We are moving all comm installations from tactical setup to a fixed setup," said Airman Heist.

The command post here is just one project the 332nd ECS Airmen are working on right now. As a result of both a quick setup and bad weather here, the antennas are ready for a much-needed overhaul.

"We are replacing all the antennas and cables for the command post," said Airman Brown.

"Rain can rust the connectors, and wind can cause the cables to rub together making them fray and separate from the antennas," said Airman Heist. "Once the new antennas are in place, they will be heavily fastened to the roof."

Even though the command post hasn't reported any communications problems as of yet, it would be just a matter of time before their connectivity would start to diminish, according to Airman Brown.

"Eventually it (command post) might have communications failures and interference, which can cause static," said Airman Brown.

"Even the giant voice system would eventually have problems working correctly," said Airman Heist.

The Airmen from the 332nd ECS here are also fixing the 332nd Expeditionary Operations Support Squadron and the maintenance operations center communication systems and will eventually make every facility's connectivity more permanent.

NOT YOUR DADDY'S TV DISH

Satellites on the front

Photo and story by Airman 1st Class Tarkan Dospil
379th Air Expeditionary Wing
Public Affairs

OPERATION ENDURING FREEDOM — In today's information age, satellites are a vital link for global communication. Commanders and troops rely on them to ensure information is at least one step ahead of the enemy in the War on Terrorism. At this forward deployed location, that job falls to a satellite communications team from the 114th Combat Communications Squadron of the Florida Air National Guard.

"We operate and maintain satellite ground terminal equipment capable of transmitting and receiving data over great distances," said Staff Sgt. Richard Calvert, a satellite operator whose team is assigned to the 379th Expeditionary Communications Squadron. "We can transport, set up, and operate satellite ground terminals virtually anywhere in the world in a short period of time, and we can relocate as needed."

Besides providing information for the war, the SATCOM team is responsible for many other communications links as well.

"There are many computers and phones on this base, and they have to be routed and switched through several types of equipment," Sergeant Calvert said. "Eventually, their signal comes to SATCOM. You could call around the base with us, but if you want to talk to Europe or to the U.S., you have to go through SATCOM."

The SATCOM equipment is manned 24 hours a day. "Many people are depending on that link," he said. "We perform preventive maintenance, alignments and repair to off-line equipment such as (drawers or racks of electronics) that can be brought on-line quickly if something fails."

Sergeant Calvert likens his job to a fireman. "We monitor the equipment and wait for something to go wrong," he said. "And if it does, we race to get it fixed as fast as possible. Good preventive maintenance makes outages rare."

The most difficult part of the job is the initial set-up. "Setting up the ground terminal in the middle of nowhere is hard," Sergeant Calvert said. "Once we're in place and we have stable power, we can monitor the satellite. At that point, our job is to make sure the link stays up. That's important to understand. We only use the satellite, we don't control it."

The sergeant said he loves his job not only because it interests him, but also because of the role satellites play in modern warfare.

"Throughout time, wars have been won not only by the army with the most proficient fighters on the front lines, but also the army with the best logistics and communications supporting them," he said.

Tech. Sgt. Mark Darragh, 379th Expeditionary Communications Squadron, checks a satellite dish barrier to ensure it's secure.

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READABILITY BASED ON FLESH-KINCAID SCORES

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Comm capability comes in many different packages, and the 379th's piece of the pie is one piece decision-makers can't live without.

Staff Sgt. Michael Droddy power washes satellite dishes for the 379th Expeditionary Communications Squadron. These satellite dishes provide communication capabilities to forward-deployed units throughout the theater.

Staff Sgt. Joshua Strang / 354th CS

5 AEF UPDATE

AUSTERE COMMUNICATIONS

No job's routine when stationed in harm's way

By Maj. Shawn H. O'Day
Air Force Materiel Command
Communications Directorate

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A recent deployment to Afghanistan provided me with an up close — sometimes too close — personal view on how coalition communications were delivered in support of Operation Enduring Freedom.

As part of Air Expeditionary Force "bucket" 9/10, I traveled to Southern Asia where I served as the chief, Future Operations for Combined Forces Command-Afghanistan, Joint Communications Division. I was a communications planner, which included the facilitation of transitioning communications functionality from the United States to the International Security Assistance Force, or ISAF.

I worked closely with ISAF personnel. Their primary role is to support the government of Afghanistan in providing and maintaining a secure environment in order to facilitate the rebuilding of Afghanistan. In turn, this provides an environment conducive to establishing democratic structures, facilitating the reconstruction of the country and helping to expand the influence of the central government.

As part of a small team from ISAF's communications planning section, I worked closely with Lt. Col. Andre Gathers, also an Air Force communicator. The third person on our team was Chief Warrant Officer Five Ralph Prickett, an Army Signals radio expert.

Our task was to upgrade the entire Air Command and Control Network used by ISAF and coalition forces. By upgrading this network, the Combined Joint Operations Center at Headquarters ISAF could communicate with all fixed-wing aircraft flying in the Afghanistan area of responsibility. This capability would lessen possible fratricide, enhance a pilot's situational awareness and provide complete theater ground-to-air radio coverage.

We began by visiting potential radio sites that had little or no ISAF communications. Some of these sites were bare and situated in valleys completely surrounded by mountains, while others were located in the middle of small towns. The plan was to come up with the best location for the communications package — UHF/VHF transceivers, generators and satellite communications equipment; discuss support with the local installation commander; and get the local communications support people to buy off on operating and maintaining the communications package.

DANGER AT 13,000 FEET

For one eventful trip, our team needed to visit a remote site almost hidden in the mountains of the most northern region of Afghanistan. Colonel Gathers' connections obtained room for us on a Dutch C-130 that was transporting a group of ISAF special forces. We had a four-hour trip ahead of us that included two stops before we reached our destination. Flying on a C-130 for four hours in a jump seat is not the most comfortable way to travel.

As we started our approach for our first stop, I heard what seemed to be a huge explosion and immediately felt a burst of air. Small particles of something like snow swirled around the inside of the aircraft, although I knew it wasn't snow since it was April. Across from me, a once sleeping Chief Warrant Officer Prickett now was awake and his mouth was wide open in awe.

Time seemed to stand still. As we started to descend rapidly from about 13,000 feet, I glanced over at the loadmaster who also seemed to have a dazed look on his face. Colonel Gathers, who was sitting to my right, signaled me to put my helmet on. We didn't know what was going on. I looked over my left shoulder and the left emergency door of the aircraft was gone!

One of the crew ran out from the cockpit and picked up a huge hunk of metal from the back of the plane. As he carried it forward, I recognized it as the door of the plane. The loadmaster helped and they secured the door with straps as best they could right beside where I was sitting. About 20 minutes later we landed at what seemed to be a huge abandoned airfield. The coalition special forces on board quickly posted two soldiers at the front and rear of the plane in case there were any snipers or unwanted visitors. We spent about two hours on the ground while the crew worked on repairing the door. They eventually pulled out duct tape and used it as a seal to place the door on the hinges.

Eventually we arrived at the site and an armored convoy met us at the airfield. A German captain was the only communications officer on the base. ISAF calls these small bases Provincial Reconstruction Teams. This one happened to be under German control.

We conducted the site survey and spoke with the PRT commander to ensure he was aware of what we required from his personnel. The next morning I awoke to what sounded like firecrackers. At breakfast I inquired about the crackling sound and asked if anyone else heard it. Our German counterpart chuckled, said it was enemy gunfire, and that it occurs daily. I now can say I've heard my first enemy gunfire.

That afternoon we departed en route to Kabul, Afghanistan. The remaining site surveys we conducted went off without a hitch. That's not to say there weren't other anxious moments. Downtown riots occurred one block from where I was staying. We were locked and loaded, expecting the worst.

A part of me is still there. I now pay more attention to the nightly news when Afghanistan is mentioned. I hope co-workers and friends are as blessed as I was and return to their loved ones soon.

8 15
READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

The Global War on Terror is being fought not only in Iraq, but also in Afghanistan. However, reconstruction efforts are still a high priority.

JARGON WATCH

PRT: Provincial Reconstruction Team
ISAF: International Security Assistance Force

Maj. Shawn O'Day stands next to the C-130 that was used to shuttle his team to comm-site surveys. His job in Afghanistan was to help the International Security Assistance Force, or ISAF, develop communications functionality, sometimes in very remote areas.

Courtesy photo

STANDING WATCH IN MOSUL, IRAQ

Photos by Tech. Sgt. Jeremy T. Lock / 1st CTCS

ANOTHER DAY IN *Paradise*

FAILURE IS NOT AN OPTION

MOSUL PATROL

Army Soldiers leave Mosul's Forward Operating Base Marez in a Stryker combat vehicle to conduct cordon and knock patrols. The Soldiers are from the 1st Battalion, 17th Infantry Regiment, 172nd Stryker Brigade Combat Team based out of Fort Wainwright, Alaska.

Iraqi soldiers search men suspected in a stabbing incident.

U.S. and Iraqi soldiers break at a Mosul market.

A shop owner takes a break to watch the joint-patrols.

Army Sgt. 1st Class David Dodson prepares for the day.

Army Stryker units patrol the streets of Mosul looking out for insurgents and weapons caches along the way. Iraqi children still flock to the U.S. soldiers.

FAILURE IS NOT AN OPTION

CONCERNED, BUT NOT SHAKEN

" [The Iraqi Prime Minister] comes wondering whether or not we're committed. He hears all kinds of stories ... I assured him that this government stands with the Iraqi people. We're impressed by ... the courage of the Iraqi people. No question the terrorists and extremists there are brutal. These are people who just kill innocent people to achieve an objective, which is to destabilize his government. The Prime Minister tells me that he and his government are not shaken by these actions. They're concerned about them, they're not shaken by them." — Pres. George Bush

Life goes on for many families as they work to carve out a new future for themselves.

Army Staff Sgt. Jason Staggs waits for an explosive ordnance team, while division commanders discuss turning Mosul's forward operating base over to the Iraqis.

FAILURE IS NOT AN OPTION

TRAIN LIKE WE FIGHT

▾ Staff Sgts. Taraki Collins and Ian Bendel, and Airman 1st Class Zack Welden, 48th Communications Squadron, repair cut telephone and network lines at a field training exercise site at Ramstein Air Base, Germany, as part of the deployment exercise called Silver Flag.

Tech. Sgt. Randy Mallard / 31st CS

Senior Airman Veronica Fullwood / 420th CS

◂ A team of U.S. and British military members monitor defensive operations at the Combined Air and Space Operations Center during Joint Red Flag, an exercise designed to enhance operational and tactical effectiveness through joint integrated training.

Staff Sgt. Scott Sturkol / 421st CTS

A member of the 60th Communications Squadron from Travis AFB, Calif., takes aim during Eagle Flag, an expeditionary combat-support skills training week.

Tech. Sgt. Randy Mallard / 31st CS

Airmen from the 31st Communications Squadron at Aviano Air Base, Italy, build a tent that will contain communication assets during a deployment exercise called Silver Flag.

FAILURE IS NOT AN OPTION

ROAR LIKE A LION

An F-15E Strike Eagle from the 336th Expeditionary Fighter Squadron conducts a mission in support of Operation Mountain Lion in Afghanistan. A-10 and B-52 aircraft also flew close-air support to troops on the ground engaged in rooting out insurgent sanctuaries and support networks.

Master Sgt. Lance Cheung / AFNEWS

C4ISR ★ Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance

TIME MACHINE

(Above left) American soldiers disembark from a Coast Guard landing craft off Normandy under heavy Nazi machine gun fire on June 6, 1944. Photo by Coast Guard Chief Photographer's Mate Robert F. Sargent. (Above) A soldier comforts a grief-stricken American infantryman whose buddy had been killed in action. In the background, a corpsman methodically fills out casualty forms in the Haktong-ni area, Korea, Aug. 28, 1950. Photo by Army Sgt. 1st Class Al Chang. (Left) An 8th Air Force B-17 makes a bombing run over Marienburg, Germany, in 1943. Date and the photographer are not known. Army Air Forces Photo.

COMBAT PHOTOGRAPHERS

By Linda D. Kozaryn
American Forces Press Service

WASHINGTON — In 2000 Richard Schickel, a Time Magazine film critic, produced the 90-minute documentary about World War II combat photographers that included missing footage shot by Academy Award-winning director John Ford on the beaches of Normandy.

At the screening of "Shooting War," then Secretary of Defense William Cohen thanked these men and the other combat photographers who "caught" the images of World War II, Korea, Vietnam, the Gulf War, Bosnia and Kosovo. He said America is indebted to the heroism and the courage of the men and women armed only with cameras who show what the nation's servicemembers go through and the sacrifices they make.

Much of the dramatic, tragic footage was not released in full during the war, Mr. Schickel said, because "we didn't want to show American losses and American pain. Now it's many years later, and we can show all of that. I think it's to our advantage to show all of the story of World War II which includes the pain, the suffering, the losses."

The film embraces every branch of the service and many of the most significant battles of World War II, he said, "but it is told through the eyes of men who were anonymous, for the large part, in gathering this footage."

The documentary highlights more than 20 veteran photographers, who talk about their work recording the realities of war.

Also at the screening in 2003, members of the 1st Combat Camera team displayed their work and answered questions for press members. The military's joint combat camera teams document, process and transmit still and motion imagery to support air, sea and ground combat operations.

They're a "low-density, high-demand type of organization in all the services," said one representative. They play an important role in every contingency operation, training exercise or humanitarian relief mission.

Whether the mission involves mine-clearing, doing damage surveys, settling disputes among local residents, aiding refugees or documenting war crimes — the military's combat cameramen are there.

Not only do they provide historical documentation of those events, but more importantly, they provide a tool for the commanders to make decisions.

NEWS BRIEFS

MILESTONES

GLOBAL HAWK GOES 10,500 HOURS

THE GLOBAL HAWK unmanned aerial system continues to prove its utility and effectiveness in the War on Terror, having flown more than 10,500 flight hours by late July.

The Global Hawk achieved 10,000 flight hours in June, with its ratio of combat flying hours to non-combat hours increasing to 63 percent of total flight hours.

Global Hawk has entered the sustainment phase with systems supporting combat and is undergoing Test and Evaluation as well.

"This milestone demonstrates how the Air Force has successfully taken a demonstration program and turned it into a war-winning capability," said Mr. Randy Brown, director of the 303rd Aeronautical Systems Group. "No other system provides the persistent, real-time surveillance that Global Hawk does. Its ability to loiter where needed for 24 hours or more and provide information to the warfighter is unprecedented."

Reflecting the program's joint nature, the Air Force helped the Navy purchase two Global Hawks, which provide battlefield commanders with near-real-time, high-resolution intelligence, surveillance and reconnaissance imagery. Cruising at altitudes up to 65,000 feet, they can survey large geographic areas with pinpoint accuracy to give military decision makers information about the enemy. — *Chris McGee, Wright-Patterson AFB, Ohio*

RADIO CHECK

Senior Airman Christina Ponte / 355th CS

Senior Airman Troy Patrick and Staff Sgt. Ivan Eggel test their radios and equipment before flying to Gila Bend, Ariz., for rescue training as part of Exercise Angel Thunder. The five-day exercise, held at Davis-Monthan AFB, Ariz., and in other areas, is designed to provide realistic combat search and rescue training for active-duty, Reserve and Guard Airmen in combat rescue forces. They're both from the 48th Rescue Squadron.

FREQUENCY LINKS

NEW UHF-VHF RADIOS LINK AIRCRAFT WITH GROUND TROOPS, HELICOPTERS

A NEW RADIO INSTALLED in Air Force F-15E Strike Eagles is enhancing the fighter's ability to communicate more effectively with ground troops and civilian aircraft. The fleet is receiving ultra high frequency/very high frequency, or UHF/VHF, radios that allow aircrews to provide critical, time-sensitive and encrypted information to ground forces or helicopters regarding enemy locations and actions. That capability is proving to be a force multiplier. By linking ground forces with F-15E aircrews, the VHF radio shortens the time from request to response. F-15E aircraft flying overhead can use airborne sensors to detect and track insurgents operating during the day or night, then communicate useful information to ground forces, other aircraft or commanders by using VHF radio. Along with aiding ground troops, the VHF radio is allowing F-15 pilots flying combat air patrol missions as part of homeland defense to communicate with civilian airliners to clarify intentions and convey instructions, when necessary. — *Chris McGee, Wright-Patterson AFB, Ohio*

RESEARCH

STRENGTH NEEDED FOR C2 NETWORKS

THE AIR FORCE Office of Scientific Research in cooperation with Binghamton University, announced it's funding a new research project targeted at improving the strength and availability of command and control networks.

Dr. N. Eva Wu, professor, department of Electrical and Computer Engineering, said command and control of the air space continues to be increasingly complex and the operating environment is a leading stressor air operations centers have in managing the battlefield.

"The collection and assembly of intelligence, surveillance, and reconnaissance information ... are critical to the decision-making process and the feedback of the decision to the warfighter," the professor said. She added that the more frequently decision and feedback loop closures occur in an air operation, the heavier the reliance on C2 functions.

"The goal of our [current] research is to enhance availability of command and control systems to effectively reduce fragility while minimizing response time to service requests."

Fragility reduction assures an operator's continuous access to battlefield information, even when primary systems have failed or become disabled. She said little attention has been paid to the flow of information for the supporting systems.

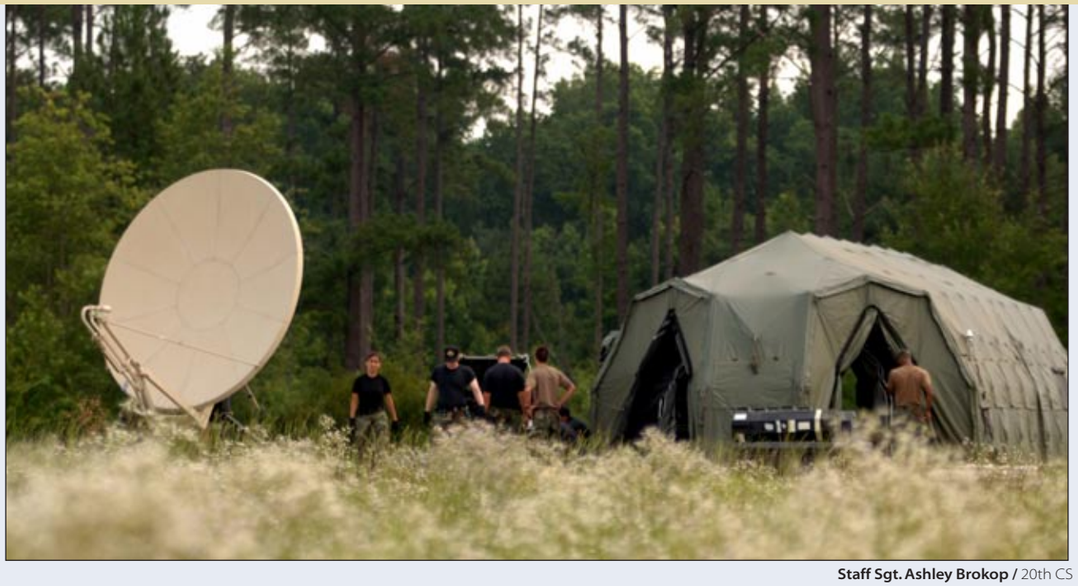
"We want to design architecture so that the decision-making process is not compromised by subsystem failures or bottlenecks. Quality information needs to be accessible in real time to decision makers," Wu said. Many of the technological breakthroughs enjoyed by millions today, such as lasers and the computer mouse, trace their scientific roots to research first funded by AFOSR. — *William J. Sharp, AFOSR PA*

KUDOS

COUPLE RECEIVES AIR FORCE AWARD

The Air Force has selected Maj. Gen. William T. and Mrs. Cynthia E. Lord as the winners of the 2006 General and Mrs. Jerome F. O'Malley Award. The award recognizes a wing commander and spouse team who contribute "above and beyond" to the nation, the Air Force, and the local community. Prior to his current job as Director, Information, Services and Integration Division, SAF/XCI, General Lord was the 81st Training Wing commander, Keesler AFB, Miss.The Lords led the largest technical training overhaul in 81st Training Wing's history, which dramatically impacted the wing and the local community. They also led the monumental disaster response and rebuilding effort on a base that sustained one billion dollars in damage from Hurricane Katrina. A formal presentation ceremony will be conducted by the Air Force Chief of Staff later this year at the Pentagon.

AIR SUPPORT CENTER



Staff Sgt. Ashley Brokop / 20th CS

Airmen assemble an air support operations center at McEntire ANGB, S.C., during exercise Operation Dynamic Weasel. The exercise is designed to sharpen tactics, techniques and procedural skills while practicing for combat situations. These Airmen are from the 682nd Air Support Operations Squadron, Pope AFB. N.C.

CYBER WARFIGHTERS

SPACE: THE INVISIBLE POWER IN THE FIGHT

WHEN SPACE PROFESSIONALS deploy, they learn how to better provide combat effects, and warfighters learn more about the invisible power space brings to the fight.

"It's not good enough to fly satellites from afar," said Lt. Col. John Shaw, the 4th Space Operations Squadron commander. "We need to understand how our systems have an impact on warfighters around the world. That understanding allows us to better deliver combat effects from space."

Capt. Johnnie Mason, a communications flight commander with the 4th SOPS, came back with a new understanding of who the warfighters are. He deployed to Southwest Asia to command a communications flight made up of servicemembers and contractors.

"The makeup of deployed forces has changed to include not only guardsmen and reservists, but government civilians and contractors as well," he said.

Captain Mason's team established the first network control center at its location and set up radio communications systems that warfighters will use to carry out their missions for several years.

Staff Sgt. Tina Miller, a radio communications craftsman with the 4th SOPS, recently returned from a joint deployment to Djibouti, which borders Somalia in northeast Africa. She worked as part of the task force's command, control, communications and computers directorate. American forces there are helping build infrastructure such as schools and water pumps in the republic of about 486,000 people.

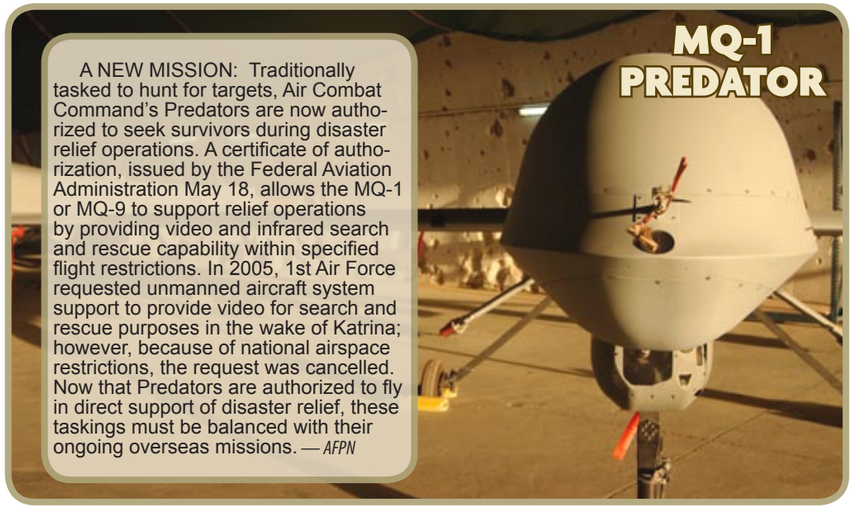
"(My deployment) helped me see the other side of the coin," Sergeant Miller said. "When I'm here on base, sometimes I don't feel like I contribute a lot to the fight against terrorism. But over there, I realized how much we help people in the field and personnel overseas." — *Staff Sgt. Don Branum, 50th SW/PA*

WIRELESS CONNECTION

Airman Jonathan Snyder / 354th CS

Airman 1st Class Shelby Jacobson and Staff Sgt. Wilbur Smith set up a wireless router in the air traffic control tower at the Blair Lake Bombing Range in Alaska. Once the new wireless router is set up this remote base will be able to share information via computer with Eielson AFB. Both Airmen are from the 354th Communications Squadron, Eielson AFB.

STILL SEEKING ENLISTEES: Despite the current reductions in force, the Air Force is still seeking to fill positions such as Staff Sgt. Nocholas Elek's Joint Tactical Air Command and Control specialty. The Air Force needs almost 28,000 enlisted members to fill vacancies in security forces, mechanics, administration and electronics. Other positions with openings include computer systems operations, air traffic control, intel, aircraft loading and maintenance, vehicle ops and explosive ordnance disposal. "Hot" jobs also include intel and air and ground linguists. — *AFPN*



A NEW MISSION: Traditionally tasked to hunt for targets, Air Combat Command's Predators are now authorized to seek survivors during disaster relief operations. A certificate of authorization, issued by the Federal Aviation Administration May 18, allows the MQ-1 or MQ-9 to support relief operations by providing video and infrared search and rescue capability within specified flight restrictions. In 2005, 1st Air Force requested unmanned aircraft system support to provide video for search and rescue purposes in the wake of Katrina; however, because of national airspace restrictions, the request was cancelled. Now that Predators are authorized to fly in direct support of disaster relief, these taskings must be balanced with their ongoing overseas missions. — *AFPN*

SHOUT OUTS

ARMY WEB SITE OFFERS AF VOICE

WHEN ARMY VIDEOGRAPHERS deploy, they often film greetings from all servicemembers to be sent back to media outlets near the person's home station. To see more than 1,000 Air Force members give "shout outs," just go to www.dvidshub.net and click on the Air Force icon listed under DVIDS Greetings. —*Staff report.*

C-RAM

Computer chip offers better data storage capability in space

What is it?

A chemical alloy, used in everyday electronic items such as rewritable CDs and DVDs, serves as the source of a new computer chip which researchers hope will demonstrate non-volatile memory, or information storage retention without a power source, in the radiation-hardened space environment. Debuting in 2000, the chalcogenide random access memory, or C-RAM, program, administered by the Air Force Research Laboratory's Space Vehicle Directorate, Kirtland AFB, N.M., has invested in the innovative, tiny component, which features 16 times the retention capacity of the best non-volatile memory available for use in the cosmos.

Why do we need it?

Defense satellites presently employ volatile forms of RAM to store most data. Although readily available and relatively high-performance, current hardware must be powered at all times or the data disappears. On the other hand, commercially-produced non-volatile data retention media, such as hard disks or flash memory, provide lasting backup storage, but cannot be reliably used in the harsh surroundings and vacuum of space. Due to its high density and rapid speed, as well as its low cost and inherent radiation hardness, C-RAM provides a ground-breaking alternative to space-based volatile memory.

"We are counting on C-RAM to be a key enabler in space electronics in the future. It also provides a new tool for flexibility and reliability for the space electronics engineer," said Ken Hunt, senior electronic engineer and C-RAM program manager, AFRL's Space Vehicles Directorate. "With this breakthrough technology, spacecraft system designers will no longer have to design around volatile memory; the power in a spacecraft could be cycled on and off, but the data will still be there. And we're also making sure that the chip will retain information across the huge temperature ranges experienced by satellites."

How does it work?

The reprogrammable technology involves a rather surprising procedure, in which nanoscale amounts of the chalcogenide material are melted to more than 1,100 degrees Fahrenheit. Cooled as either glass or crystal, the memory bit stores data as a difference in resistivity.

What's ahead?

C-RAM's ultimate impact will be improved data storage capability and increased onboard processing performance, which significantly contributes to efficient spacecraft operations and, ultimately, enhances support to the warfighter.

Source: Michael P. Kleiman, AFRL

AEF UPDATE

intercom

Journal of the Air Force C4ISR community ★ September 2006

We choose leadership over isolationism, and the pursuit of free trade and open markets over protectionism. We choose to deal with challenges now rather than leaving them for future generations. We fight our enemies abroad instead of waiting for them to arrive in our country. We seek to shape the world, not merely be shaped by it; to influence events for the better instead of being at their mercy.

President George W. Bush

FIVE YEARS LATER

FAILURE

IS NOT AN OPTION

CYBERSPACE MISSION ★ SUSTAINING COMM ★ AUSTERE AIRFIELD
UPGRADE IN KIRKUK ★ CLEAR CONNECTION ★ FRONTLINE SATELLITES